

## WHAT IS CLAIMED IS:

1. An even harmonic mixer comprising:

an antiparallel diode pair means including a first series  
5 unit in which a first diode and a first resistor are connected  
in series and a second series unit in which a second diode and  
a second resistor are connected in series, said first and second  
series units being connected in parallel so that said first and  
second diodes are opposite in polarity.

10

2. The even harmonic mixer according to Claim 1, wherein  
said first series unit has a plurality of diodes in series which  
are connected in series to said first resistor and which includes  
said first diode, and said second series unit has a plurality  
15 of diodes in series which are connected in series to said second  
resistor and which includes said second diode.

3. The even harmonic mixer according to Claim 1, wherein  
said first series unit has a first capacitor connected in parallel  
20 to said first resistor and said second series unit has a second  
capacitor connected in parallel to said second resistor.

4. The even harmonic mixer according to Claim 1, wherein  
said first resistor is connected to a cathode of said first diode  
25 in said first series unit and said second resistor is connected  
to an anode of said second diode in said second series unit so  
that said first and second resistors are connected to each other  
at an end of said antiparallel diode pair means, and wherein  
said even harmonic mixer comprises a first capacitor having an  
30 end connected to a node between said first resistor and said

first diode and a second capacitor having an end connected to a node between said second resistor and said second diode, an IF signal is input and output by way of a node between said first and second resistors, other ends of said first and second capacitors are connected to each other, an LO wave is applied to a node between the other ends of said first and second capacitors, and an RF signal is input and output by way of the node between the other ends of said first and second capacitors.

10           5. The even harmonic mixer according to Claim 3, wherein said first resistor is connected to a cathode of said first diode in said first series unit and said second resistor is connected to an anode of said second diode in said second series unit so that said first and second resistors are connected to each other  
15 at an end of said antiparallel diode pair means, and wherein said even harmonic mixer comprises a third capacitor having an end connected to a node between said first resistor and said first diode and a fourth capacitor having an end connected to a node between said second resistor and said second diode, an  
20 IF signal is input and output by way of a node between said first and second resistors, other ends of said third and fourth capacitors are connected to each other, an LO wave is applied to a node between the other ends of said third and fourth capacitors, and an RF signal is input and output by way of the node between  
25 the other ends of said third and fourth capacitors.

6. The even harmonic mixer according to Claim 1, wherein said first resistor is connected to a cathode of said first diode in said first series unit and said second resistor is connected  
30 to an anode of said second diode in said second series unit so

that said first and second resistors are connected to each other at an end of said antiparallel diode pair means, and said first series unit comprises a first capacitor connected to an anode of said first diode and said second series unit comprises a second capacitor connected to a cathode of said second diode, and wherein said even harmonic mixer comprises a third resistor having an end connected to the anode of said first diode, a fourth resistor having an end connected to the cathode of said second diode and another end connected to another end of said third resistor, a third capacitor having an end connected to a node between said first resistor and said first diode, and a fourth capacitor having an end connected to a node between said second resistor and said second diode, an IF signal is input and output by way of a node between said first and second resistors, other ends of said third and fourth capacitors are connected to each other, an LO wave is applied to a node between the other ends of said third and fourth capacitors, and an RF signal is input and output by way of the node between the other ends of said third and fourth capacitors.

20

7. The even harmonic mixer according to Claim 1, wherein said first resistor is connected to a cathode of said first diode in said first series unit and said second resistor is connected to an anode of said second diode in said second series unit so that said first and second resistors are connected to each other at an end of said antiparallel diode pair means, and said first series unit comprises a third resistor connected in series to an anode of said first diode and a first capacitor connected in parallel to said third resistor and said second series unit comprises a fourth resistor connected in series to a cathode

30

of said second diode and a second capacitor connected in parallel to said fourth resistor, and wherein said even harmonic mixer comprises a third capacitor having an end connected to a node between said first resistor and said first diode and a fourth capacitor having an end connected to a node between said second resistor and said second diode, an IF signal is input and output by way of a node between said first and second resistors, other ends of said third and fourth capacitors are connected to each other, an LO wave is applied to a node between the other ends of said third and fourth capacitors, and an RF signal is input and output by way of the node between the other ends of said third and fourth capacitors.

8. The even harmonic mixer according to Claim 3, wherein said first resistor is connected to a cathode of said first diode in said first series unit and said second resistor is connected to an anode of said second diode in said second series unit so that said first and second resistors are connected to each other at an end of said antiparallel diode pair means, and said first series unit comprises a third capacitor connected in series to an anode of said first diode and said second series unit comprises a fourth capacitor connected in series to a cathode of said second diode, and wherein said even harmonic mixer comprises a third resistor having an end connected to the anode of said first diode and a fourth resistor having an end connected to the cathode of said second diode and another end connected to another end of said third resistor.